

NOTES ON AUSTRALIAN DIPTERA, No. vi.

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(Communicated by Dr. E. W. Ferguson.)

(Twelve Text-figures.)

[Read 27th May, 1925.]

In this paper I present some notes on and descriptions of Australian acalyprate Diptera. As in the case of material dealt with in preceding papers on these insects, the types will be returned to Dr. Eustace W. Ferguson to deposit in some Australian museum where they may be available to subsequent workers.

Family Sciomyzidae.

This family is very closely allied to the Sapromyzidae and much more difficult to distinguish from it than one would expect if he judged relationships by existing catalogues and books on classification. The European fauna contains, for the most part, species which are readily assigned to one or other of these families by the use of characters listed for that purpose by Schiner and the earlier authors. But when one has before him species from all over the world, it is a much more difficult matter to separate the families. General habitus is a good index in Europe, but this fails in the Orient and Australasia. In fact the comparative size of the basal and anal cells of the wings, small in Sapromyzidae and large in Sciomyzidae, is of no value in many cases, and new characters must be discovered if we are to maintain both families. That the families ought to be kept separate is my personal opinion, based upon a knowledge of the habits and habitats of the adults. So far as I have seen, the larvae of the Sciomyzidae are found in water, and in some cases in molluscs as parasites, and the adults in marshy situations almost exclusively. On the other hand I have found no aquatic nor semiaquatic larvae of Sapromyzidae, and the adults are not found in marshy spots, but in woodlands.

It is possible that my attitude in the matter of separating these families is influenced by these biological factors, but in any case I have decided that until more data are available the families ought to remain separate. With this end in view, I have examined carefully the structural details of the species before me and find that they differ in the extent of the sixth wing vein more noticeably than in any other obvious character. This vein in Sciomyzidae is traceable to the margin, while in Sapromyzidae it is not. Ordinarily the prosternal plate in the former is small, while in the latter it almost fills the space between the fore coxae. The mesopleura in Sapromyzidae usually has a strong bristle on its hind margin which is rarely present in Sciomyzidae. Both families lack vibrissae, have the auxiliary vein of wing complete and distinctly separated from first on its entire length, the discal and basal cells separated by a cross-vein, the

anal cell and sixth wing-vein present, and the tibiae with distinct preapical dorsal bristle.

I have seen but two genera from Australia, *Helosciomyza* Hendel and *Melina* R.-D.

Genus HELOSCIOMYZA Hendel.

This is an aberrant genus possessing long bristles on the costa, a character common to genera of Helomyzidae, but rare outside that family. In other respects it is a typical sciomyzid. Hendel described the genus in 1917 (*Deut. Ent. Zeit.*, p. 33). I have described two species from New Zealand and placed *rara* Hutton in the genus (*N.Z. Journ. Sci. and Tech.* 5, 1922, 228).

HELOSCIOMYZA FERRUGINEA Hendel.

♂.—Brownish-yellow. Frons orange coloured, orbits and triangle whitish; face testaceous yellow. Thorax with four rufous-brown vittae, the broad lateral pair narrowly divided by a grey line behind the suture; scutellum grey on sides. Fore and hind femora and tibiae dark at apices, the fore femora indistinctly so; hind tibia with a brown band at base; apical segment of tarsi dark. Both cross-veins narrowly clouded.

Each orbit with two bristles; arista pubescent. Sternopleura with two or three bristles; mesopleura bare; mesonotum with two pairs of dorsocentral bristles and a pair of long prescutellar acrostichals. Hind tibia with two preapical dorsal bristles.

Length, 5.5 mm.

Originally described from Victoria. I have one specimen from Como, N.S.W. (H. Petersen).

Family Sapromyzidae.

I have received, from various sources, material belonging to this family and present data upon three previously described and one new species.

Genus STEGANOPSIS de Meijere.

This genus was founded for the reception of a Javanese species, *pupicola* de Meijere, which feeds in the larval stages in the chrysalides of a butterfly. Later Hendel described a species from Formosa, and Kertesz one, *vittithorax*, from New South Wales, while Frey erected a new genus, *Steganolauxania*, for the reception of the North American species *Lauxania latipennis* Coquillett, which was included in *Steganopsis* by some authors. This genus, I think, is unnecessary, *latipennis* agreeing very closely with the species I have seen from Australia and the Orient.

I also consider it as very probable that the species described by Hendel is a synonym of the species redescribed below; Kertesz's species certainly is.

STEGANOPSIS MELANOGASTER (Thomson).

Head yellow; frons opaque, ocellar spot black; face glossy, with a black spot on each side, and a brown mark below eye; antennae yellow, third segment largely brownish-fuscous; apices of palpi black. Thorax tawny-yellow, dorsum with about 6 brownish-red vittae, the sides of which are usually dark, sometimes black. Abdomen pitchy coloured, paler in male, glossy. Legs tawny-yellow, fore tarsi more or less blackened. Wings brownish-yellow, darkest along costa, becoming hyaline behind, apices narrowly hyaline.

Anterior orbitals incurved, posterior pair curved backward; first and second antennal segments longer than wide, both haired below, third almost twice as long as first and second combined and nearly six times as long as thick; arista short haired; face convex; eye higher than long; labrum high and distinct. Thorax with three pairs of dorsocentral bristles; prescutellar acrostichals distinct; intra-alar absent; sternopleural 1; scutellum flattened, elongate, rounded apically. Fore femur without a comb. Wing venation as in Figure 1.

Length, 3-4 mm.

Locality, Botany Bay, N.S.W. (H. Petersen). Originally described from Sydney.

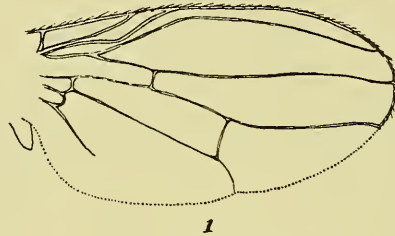


Fig. 1. *Steganopsis melanogaster*, wing.

I have before me a male specimen from the Philippine Islands which is, except for being paler in colour, almost identical with the male of *melanogaster*, and which is apparently *convergens* Hendel. As Thomson's species is the oldest in the genus I do not attempt to treat at this time with the synonymy. It is strange that in Thomson's description nothing is mentioned of the head characters of his type; the head may be missing in this.

Genus TRIGONOMETOPSIS novum.

Generic characters.—Similar to *Trigonometopus* Macquart, the face retreating below, eyes elongate oval, each orbit with two bristles, antennae short, arista subnude, thorax with three pairs of dorsocentrals, outer cross-vein beyond middle of wing, third vein not curved, costa to apex of fourth vein, and hind tibia with a preapical bristle. The general habitus of the two genera is similar and the black spot between antennae and eyes is present in both, though in the new genus it is not noticeably hairy. The presence of a well developed presutural bristle in the new genus distinguishes it from *Trigonometopus*.

Genotype, *Oxyrhina binotata* Thomson.

TRIGONOMETOPSIS BINOTATUS (Thomson).

A yellowish testaceous species, with the abdomen more shining than thorax. A longitudinal line of brown colour extends from vertex to anterior margin of frons; a black spot between each antenna and eye; and a pair of small round black spots on middle of face. Dorsum of thorax brownish-yellow, paler on lateral margins, darker on lines of dorsocentral bristles and bordering the pale lateral margins, and with a blackish central vitta which is obscured by greyish dusting; pleura with a faint brownish vitta; scutellum pale in centre. Legs yellow. Wings clear, yellowish on anterior portion, veins brown. Halteres yellow.

Frons about 1.5 as long as wide; cheek about one-third of eye height; proboscis thick. Acrostichals in two series, prescutellar pair of moderate size; scutellar

bristles subequal. Inner cross-vein almost at middle of discal cell; last section of fourth vein only about one-fifth longer than preceding section; outer cross-vein at a little more than half its own length from apex of fifth vein.

Length, 3.5 mm.

Originally described from Sydney, from whence I have a female specimen.

The species described from the island of Guam as *Trigonometopus setosus* by Knab does not belong to that genus. It agrees fairly well with *Trigonometopsis*, but has the first pair of dorsocentral bristles on thorax in front of suture instead of just at it, and the cheeks with some long hairs along margins which are quite conspicuous. The frons is less protruded beyond eyes and the face is unspotted. This species should apparently be located in *Panurgopsis* Kertész and not in *Trigonometopsis*, with the genotype of which it has much in common.

Genus SAPROMYZOSOMA Malloch.

This genus is distinguished from its allies by the lack of an intra-alar thoracic bristle, and the continuation of the short stubby black costal setulae to the apex of third vein.

It is possible that this genus is the same as *Homoneura* van der Wulp, but I have not seen an authentic specimen of *picea* v. d. Wulp, the genotype, so cannot give a definite opinion.

There are a number of Australian species of the genus, which appears to occur over most, if not all, of the faunal regions of the world. The species listed below appears to belong here, but the wing-tips are imperfect in the only specimen available to me so that I cannot be absolutely certain of this.

SAPROMYZOSOMA MACULIFRONS (Macquart).

Testaceous yellow, shining. Ocellar spot, a spot on each side of interfrontalia at middle of frons, basal two antennal segments, apices of palpi, and apices of tibiae black; abdomen pitchy; apices of mid and hind femora narrowly dark. Wings clear. Halteres yellow.

Arista bare. Thorax with three pairs of dorsocentral bristles, the anterior pair short; prescutellar acrostichals strong; disc of thorax with short black hairs; scutellum subconvex. Abdomen broad, hypopygium not conspicuous. Fore femur without an anteroventral apical comb, the posteroventral bristles on apical half only; hind femur without a preapical anteroventral bristle; all tibiae with distinct preapical bristle. Inner cross-vein at middle of discal cell and almost below apex of first vein; outer cross-vein at a little more than half its own length from apex of fifth vein.

Length, 3 mm.

Originally described from Tasmania. One male, Seaford, Victoria (W. F. Hill).

Genus SAPROMYZA Fallen.

In this genus the intra-alar bristle of thorax is lacking, and the short black setulae of the costa are discontinued about midway between apex of second and third veins, gradually becoming evanescent. I give the description of one species.

SAPROMYZA ATRIVENTRIS, n. sp.

♂ ♀.—Deep black, shining, thorax, fore coxae, and all trochanters orange yellow, mid and hind tibiae and tarsi more or less distinctly yellowish at bases. Wings yellowish, halteres brownish.

Frons entirely shining, orbits but little differentiated, both pairs of bristles long, sloping backwards; ocellars small; postverticals quite large; antennae inserted much above middle of profile, large, basal segment quite distinct, about as long as second, bare below, third about 1.75 as long as first and second combined and about twice as long as broad, rounded at apex; arista slender and long, distinctly pubescent; face slightly receding in profile, convex, sides a little paler than centre and with dense silvery pruinescence on entire length of parafacials, which extends along cheeks for a short distance; cheek not as high as width of third antennal segment; eye narrowed below, higher than long. Thorax with three pairs of dorsocentral bristles and a pair of long setulae in front of anterior pair, the prescutellar acrostichal pair long; scutellum convex, the four bristles subequal in length; mesopleura with one strong bristle; anterior sternopleural bristle short. Abdomen ovate, male hypopygium of moderate size. Fore femur without anteroventral comb; mid femur with anterior bristles distinct; hind femur without preapical anteroventral bristle; preapical tibial bristle distinct on all legs. Inner cross-vein a little before middle of discal cell; outer cross-vein at about half its own length from apex of fifth vein.

Length, 5-5.5 mm.

Type, female, and two paratype females, Illawarra, N.S.W.; allotype, Como, N.S.W. (H. Petersen).

No species known to me from any part of the world has the same colours of body and legs as this one. Possibly the nearest related species may prove to be *nigriceps* Macquart, also an Australian species, but it has the antennae yellow at bases and the legs and abdomen partly yellow, and in other respects does not fit the species above described.

Genus POECILOHETAERUS Hendel.

This genus was erected for the reception of a single species, *decora* Schiner, which name, being preoccupied, was replaced by *schineri* Hendel. The genus is distinguished from *Sapromyza*, to which it is closely allied, by the anterior pair of orbital bristles being incurved instead of backwardly curved. In other respects the genera are very similar.

POECILOHETAERUS SCHINERI Hendel.

A deep black species with two moderately broad and very conspicuous white pruinescent vittae extending from anterior margin of frons over disc of thorax to apex of scutellum, a less distinct vitta on sides of mesonotum and three similar on pleura; parafacials and postocular orbits white, centre of cheek black; mesonotum with a pale brown median line. Legs black, mid and hind tarsi and bases and middle of mid and hind tibiae yellowish. Wings yellowish. Halteres blackish.

Arista pubescent; third antennal segment about twice as long as broad. Thorax with four pairs of strong dorsocentrals, the anterior pair in front of suture; one moderately strong pair of prescutellar acrostichals and in front of these a few weak paired hairs; sternopleura with two bristles; scutellum with disc slightly flattened, the apex a little transverse, bristles four in number. Fore femur without anteroventral comb; all tibiae with preapical bristle distinct. Costal black setulae discontinued before attaining apex of third vein.

Length, 3-4 mm.

Known only from Eastern Australia. I have a number of specimens from Botany Bay and Illawarra, N.S.W. (Petersen).

Family Ortalidae.

I take this opportunity to record the occurrence of the following European species amongst some material sent to me by Dr. C. F. Baker from Australia.

CHRYSOMYZA AENEA Fabricius.

I believe that *melanopsis* Walker may be a synonym of this species. The species occurs also in North America, having been introduced in commerce no doubt.

Family Borboridae.

I have seen very few species of this family from Australia and pending the receipt of more material record but two species, one of them new.

Genus SPHAEROCERA Latreille.

This genus is distinguished from its allies by the lack of bristles on the scutellum; the position of the cross-vein at base of discal cell, which is basal of the one closing anal cell, causing the second basal cell to be shorter than the anal. There are other distinctions, but the above should suffice for the recognition of the genus. *Leptocera* has the fifth vein incomplete, the anal cell and cross-vein dividing second basal and discal cells absent. This genus occurs also in Australia, but I have not yet worked up the species I have on hand.

SPHAEROCERA CURVIPES Latreille.

This species has generally been referred to as *subsultans* Fabricius, due to an early error in identification. It is the largest known species of the genus, averaging about 4 mm. in length, and is very widely distributed.

I have seen one specimen from Botany Bay, N.S.W. (H. Petersen).

The larvae and adults live on manure and carrion.

Genus BORBOROIDES novum.

Generic characters.—Each orbit with two outwardly curved bristles, inner vertical bristle incurved, outer outwardly curved; ocellars long; postverticals convergent; face concave, genal bristle absent; vibrissae present; proboscis stout. Thorax with 1 humeral, 1 presutural, 2 notopleurals, and 2 pairs of dorsocentrals; scutellum with 4 bristles; sternopleura with one or two bristles. Mid tibia with 2 long dorsal bristles near apex; hind metatarsus longer than second segment. Wing venation as in Figure 2.

Genotype, the following species.

BORBOROIDES ATRA, n. sp.

♀.—Black, shining, lower part of parafacials, fore coxae, and bases of fore femora obscurely yellowish. Wings hyaline. Halteres black.

Frons smooth and shining, with some short hairs; third antennal segment higher than long, rounded in front; arista pubescent. Dorsum of thorax regularly but not densely haired, that of scutellum bare. Apical genital organs a pair of slender lamellae. Mid femur with a series of short bristles on apical half of anterior surface.

Length, 2 mm.

Type, Sydney, N.S.W., 1.11.24.

This genus has as its closest relative *Borborus* Meigen, but differs materially from it in venation of wing, in the presence of two dorsal bristles on the mid tibia such as are found in some species of *Leptocera*, and in the elongate basal segment of hind tarsus. From *Leptocera* it may be readily distinguished by the presence of the basal and anal cells of the wing.

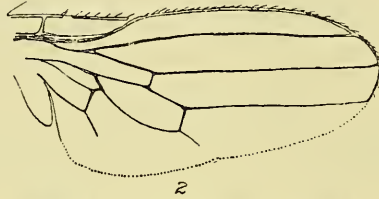


Fig. 2. *Borboroides atra*, wing.

The genus *Leptocera* occurs in Australia, the species having been referred to under the generic name *Limosina*.

Family Ephydriidae.

Subfamily EPHYDRINAE.

Genus HECAMEDE Meigen.

This genus has the frontal triangle with two or three pairs of short proclinate bristles in front of the anterior ocellus, each orbit with usually two short bristles, second antennal segment with a short forwardly directed apical bristle, and some finer hairs basally, arista short, with about six long hairs above, face concave on upper half, with a nose-like process in centre, the tip of which is invariably glossy black, three or four bristles on each side of lower half of face which are situated on slightly elevated black bases, cheek nearly as high as eye, genal bristle weak, clypeus slightly projecting. Thoracic bristles short, only the prescutellar dorso-central bristles distinct. Costa to apex of fourth vein. Mid tibia without long dorsal bristles.

HECAMEDE ALBICANS Meigen.

Black, densely pale grey pruinose, almost whitish on abdomen, more yellowish on dorsum of thorax. Anterior margin of frons slightly rufous; antennae rufous. Bases of tibiae, and the tarsi yellowish, apices of latter darker. Wings white, veins yellowish. Halteres white.

Length, 2.5 mm.

One female, Encounter Bay, S.A., on beach.

Hendel has described a species under the name *persimilis* from Formosa and de Meijere has described two others from Java. I consider it very probable that *persimilis* is merely a form of *albicans*.

I have compared the Australian specimen with European examples and can find absolutely no distinguishing characters either of colour or structure.

Subfamily CANACEINAE.

In a previous contribution on the Diptera of Australia, I presented a key for the recognition of the genera of this subfamily under the impression that subse-

quent collecting would disclose the presence of other genera than the one I then had from this continent. I now present the description of a new species of *Canace* recently received from Dr. Ferguson. The dark facial stripe appears distinctive, though the structure of the head is also characteristic.

CANACE ALBICEPS, n. sp.

♀.—Frons opaque, olive brown, the orbits greyish anteriorly; face densely white pruinulent, with a narrow dark vertical stripe, cheeks silvery white; clypeus whitish grey; palpi tawny-yellow; antennae black. Dorsum of thorax olive-brown, with very faint brown vittae, the most obvious one in centre; pleura grey. Abdomen dark greyish on dorsum, paler below. Legs greyish fuscous, extreme apices of femora, bases and apices of tibiae, and most of tarsi yellowish. Wings slightly greyish, veins fuscous. Halteres pale yellow.

Eye about 1.75 times as long as high, narrowest part of cheek (at anterior margin of eye) about as high as eye; a long upcurved bristle on cheek below middle of eye and three along its lower margin on anterior half, the hindmost one upcurved; each orbit with four long bristles directed over eye; about four pairs of incurved interfrontal bristles present; ocellar bristles long, divergent, in line with anterior ocellus; postverticals divergent, small; centre of lower margin of face slightly angularly produced, not transverse. Thorax with four pairs of dorso-central bristles, the acrostichals sparse, paired; scutellum with two long apical, and two shorter basal bristles, and two discal setulae; pleura too much damaged to determine characters in type, but the sternopleura has no strong bristles. First visible abdominal tergite elongate; genital thorns two in number. Fore femur without anteroventral comb of bristles; fore tarsus dilated apically, basal segment longer than next three combined, each of latter broader than long, neither of them as long as fifth, the claws long and curved. Last section of fifth vein subequal in length to penultimate section of fourth; veins 3 and 4 parallel apically; penultimate and ultimate sections of costa subequal.

Length, 2 mm.

Type, Sydney, 10.9.21.

Family *Drosophilidae*.

DROSOPHILA POECILITHORAX, n. sp.

♀.—Head fuscous, frontal orbits, triangle, face and cheeks densely grey pruinulent, palest on frons, anterior half of frons pale orange yellow, posterior half of interfrontalia brownish-red; second antennal segment brownish, third black, mouth-parts fuscous; a faintly indicated dark spot surrounding bases of orbital bristles. Thorax black, densely bluish-grey pruinulent on dorsum and with rather large dark brown dots at bases of hairs and bristles; humeri and scutellum concolorous with disc, the scutellum with a curved dark brown streak on each side of median line extending the entire length. Abdomen shining fuscous, without distinct markings in type. Legs fuscous yellow, darkest on middle of femora. Wings clear.

Facial keel rounded, becoming broad and disappearing before reaching mouth; labrum quite prominent; cheek fully one-third of the eye height, slightly produced at vibrissal angle, with a series of marginal bristles; arista with three hairs above and one below; anterior two orbital bristles at almost same point; postvertical bristles long. Only two series of acrostichal setulae between dorsocentrals, the prescutellar pair quite pronounced; basal pair of scutellar bristles much smaller

than apical pair. Legs normal. Second costal division twice as long as first and but little longer than third, the latter fully three times as long as fourth; penultimate section of fourth vein not more than one-third as long as ultimate and nearly as long as ultimate section of fifth; outer cross-vein not more than one-third as long as apical section of fifth vein.

Length, 1.25 mm.

Type, Sydney, 26.2.24.

This species belongs to the same section as *obsoleta* Malloch, *repleta* Wollaston, and *hydei* Sturtevant. It differs from the first-named species in having a distinct facial keel, only two series of intradorsocentral setulae, and entirely different wing venation. From the other two species it differs in its smaller size, less robust form, unspotted abdomen, venation of wing, and several other respects.

Dr. Ferguson has suggested to me that *australis* Duda is probably the same as *obsoleta* Malloch. The descriptions agree very well, the venation given by Duda being in accord with that of my species and the thoracic characters similar. There are, however, a few points of difference and without an examination of the type of *australis* it were better to leave the matter in abeyance, though there is a very great probability that the species are the same.

Family Agromyzidae.

Subfamily MILICHINAE.

Genus STOMOSIS Melander.

Related to *Desmometopa*, differing in having the frons without an M-shaped black mark; hind tibiae not dilated; mesopleura bare. I figure the head showing the long geniculated proboscis and other features (Fig. 3).

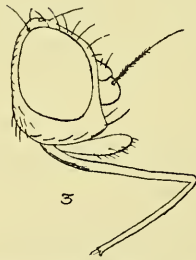


Fig. 3. *Stomosis flavoscutellata*, head from side.

The genus *Stomosis* was erected for the reception of *luteola* Coquillett which had been previously placed in *Desmometopa*. I have compared the following species with the type of Coquillett's species and find that they agree in generic characters though specifically distinct. *Luteola* is American.

STOMOSIS FLAVOSCUTELLATA, n. sp.

♀.—Head orange-yellow, upper half of orbits, frontal triangle, and occiput black; third antennal segment brown above; arista fuscous; proboscis brown. Thorax glossy black, broadly yellow along lateral margins of mesonotum from humeri to base of scutellum; pleura black; scutellum yellow. Abdomen glossy black. Legs yellow, all femora black except at bases and apices. Wings clear. Halteres yellow.

Ocellar triangle narrow, extending well over midway to anterior margin of frons; postvertical and ocellar bristles long, the former cruciate; upper three orbital bristles curved outward over eye, lower three or four incurved; interfrontal hairs very weak; profile as in Figure 3. Thorax with two pairs of dorsocentrals; prescutellar pair of acrostichals distinct; four series of setulae between dorsocentrals; basal pair of scutellar bristles much shorter than apical pair which are divergent. Hind femur with a preapical anteroventral bristle. Last section of fifth vein as long as penultimate section of fourth, the latter about one-fourth as long as ultimate section of fourth.

Length, 2 mm.

Type, Melbourne, Victoria, 14 November, 1923.

STOMOSIS VITTATA, n. sp.

♀.—Differs from the preceding species in having the upper orbits yellow; dorsum of thorax with three broad black vittae on a yellow ground, the median one extending over base of scutellum; the pleura instead of being almost entirely black have a black vitta along upper margin, the sternopleura black and two other marks, one on pteropleura and the other on hypopleura. The abdomen is not entirely black above, but has the base yellow, the pale colour extending almost to hind margin of first visible tergite in middle, and the bases of the other tergites yellow. Apices of tibiae rather broadly blackened; tarsi darkened apically.

Structurally similar to preceding species.

Length, 2.25 mm.

Type and paratype, Sydney, 3.10.24, and 26.10.24.

Subfamily AGROMYZINAE.

Genus *CERODONTA* Rondani.

The members of this genus are distinguished from those of *Agromyza* by the very pronounced spike-like apex of third antennal segment, and the presence of but one pair of scutellar bristles. The postscutellum is generally quite distinctly developed, sometimes extending well beyond apex of scutellum.

I have seen two species from Australia, both of them apparently new.

CERODONTA AUSTRALIS, n. sp.

♀.—Head yellow, interfrontalia generally darker than orbits, ocellar triangle, occiput, third antennal segment, and arista black. Thorax black, densely grey



Fig. 4. *Cerodonta australis*, antenna.

Fig. 5. *Cerodonta robusta*, antenna.

pruinulent, with indications of two darker vittae along the lines of dorsocentrals. Abdomen black, apices of tergites with a yellow line. Legs yellow, apices of tarsi infuscated. Wings greyish, radius yellow basally. Halteres yellow.

Third antennal segment as in Figure 4. Thorax with four pairs of dorso-centrals, and one pair of acrostichal setulae behind suture and in line with the second pair of dorsocentrals. Venation normal.

Length, 2.5 mm.

Type and three paratypes, Sydney, 28 October, and 21 September, 1923, and 14 September, 1924.

This species is very similar to *denticornis* Meigen, but I have examined many specimens of the latter and have found none in which the acrostichal setulae are present as in *australis*.

In Europe and North America *denticornis*, in the larval stages, does considerable damage to wheat and hay by mining in the stems.

CERODONTA ROBUSTA, n. sp.

♀.—Head lemon-yellow, ocellar spot and upper occiput black, antennal foveae, labrum, and apex of third antennal segment darkened; arista fuscous. Thorax shining black, broadly yellow on lateral margins to lateral angles of scutellum; upper half of pleura yellow; scutellum black. Abdomen black, the hind margins of tergites yellow. Legs dirty yellow, tibiae and tarsi subfuscous. Wings greyish, veins conspicuous. Halteres much yellow.

A robust species, much stouter than the others in the genus, and more resembling some species of *Agromyza*. Antennae shorter than usual in the genus (Fig. 5); head large; arista pubescent. Thorax stout, with the usual four pairs of dorsocentrals; about six series of setulose hairs between the dorsocentrals; scutellum convex; postscutellum low and small. Abdomen stout. Legs stouter than in *australis*. Wings broader than in that species; cross-veins separated by about length of outer cross-vein; last section of fifth vein subequal to preceding section; last section of fourth vein about seven times as long as preceding section.

Length, 3 mm.

Type, Sydney, N.S.W., 20.11.24. Paratype, same locality, 14.9.24.

Distinguished from any species of the genus by the short antennae, and the number of series of setulose hairs between the dorsocentral bristles on thorax.

AGROMYZA PUSILLA Meigen.

This cosmopolitan species is represented by a number of specimens taken at Sydney, N.S.W. One of these is mounted along with a specimen of *Coenosia acuticornis* Stein of which it was evidently the prey.

The species, in the larval stages, mines in the leaves of a large number of plants both cultivated and wild. Amongst those recorded are *Nasturtium*, cotton, peas, cabbage, various clovers, *Solanum*, *Valeriana*, *Eupatorium*, *Euphorbia*, etc.

Genus FERGUSONINA Malloch.

In a lot of Diptera recently received from Dr. Ferguson I find four specimens of this genus, three of them males, which sex I did not have before me when I described the genus. I note that the venation of some of the specimens shows a departure from that of the genotype in having the outer cross-vein distinct. There are, however, no important changes necessary in the generic definition previously given, the remarkable flattened head, with the much enlarged frontal lunule, being characteristic of all.

I give below a key for the identification of the species now on hand.

Key to Species.

1. Head and thorax yellow in both sexes, only a blackish tinge round ocelli; venation of wing as in Figure 6 *microcera* Malloch.
 Head with at least the ocellar spot, and thorax with at least partial vittae, black .. 2
2. Third antennal segment deep black; venation of wing as in Figure 7 .. *atricornis*, n. sp.
 Antennae entirely clear yellow 3
3. Disc of thorax with six black vittae, median pair extending from anterior margin to beyond suture, lateral pairs not extending to anterior margin, but reaching beyond hind margins of median pair; scutellum entirely yellow; venation of wing as in Figure 8 *flavicornis*, n. sp.
 Disc of thorax black, lateral margins yellow; scutellum black at base; venation of wing as in Figure 9

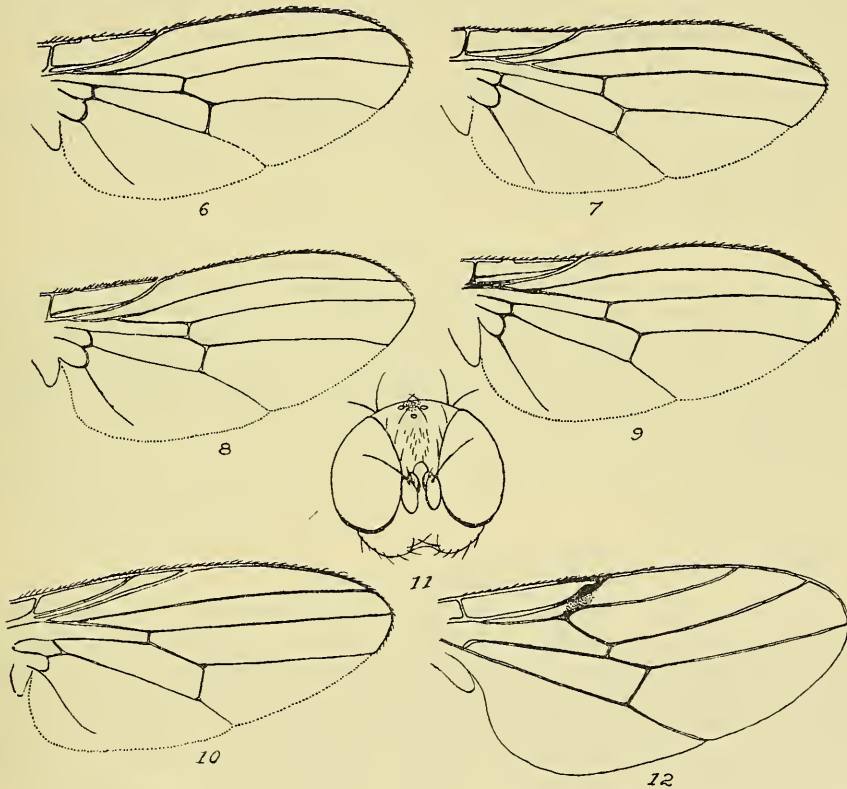


Fig. 6. *Fergusonina microcera*, wing.
 Fig. 7. *Fergusonina atricornis*, wing.
 Fig. 8. *Fergusonina flavicornis*, wing.
 Fig. 9. *Fergusonina scutellata*, wing.
 Fig. 10. *Pseudoleucopis magnicornis*, wing.
 Fig. 11. *Aphaniosoma nigradorsum*, head from front.
 Fig. 12. *Euhippelates pallidiseta*, wing.

FERGUSONINA MICROCERA Malloch.

The male of this species is all yellow, except dark rings round the ocelli. The abdominal and femoral bristles are mostly luteous.

Fifth visible abdominal tergite about as long as the two preceding tergites combined; hypopygium with base subglobose, the forceps long, slender, heavily chitinized, directed forward below venter. Hind femur stout, with a long preapical bristle and one or two shorter bristles basad of it on anteroventral surface.

Length, 1.5-1.75 mm.

Male, Sydney, N.S.W., 29.10.24.

FERGUSONINA ATRICORNIS, n. sp.

♂.—Ocellar spot and third antennal segment black. Thorax with six faint rufous vittae, the anterior margins of the fused median pair and the posterior extremities of the lateral pairs black; postnotum black. Abdominal tergites blackish at bases, especially laterally. Otherwise the species is similar to the preceding. Wings smoky hyaline.

Orbital setulae not so large as in *microcera*; only one vertical bristle on each side of frons, very long; ocellars short. Anterior pair of prescutellar dorso-central bristles very short. In other respects as *microcera* except in venation.

Length, 2 mm.

Type, Sydney, N.S.W., 29.10.24.

FERGUSONINA FLAVICORNIS, n. sp.

♀.—Lemon-yellow, shining. Head with a black spot over ocelli. Dorsum of thorax with six black vittae, the lateral pairs fused in front of suture and extending farther backwards than median pair, all of them brownish just in front of suture; pleura with a few dark patches; postnotum black. Abdomen with the tergites all broadly black, only the narrow hind margins and their sides yellow; ovipositor glossy black. Legs yellow. Wings greyish hyaline. Halteres yellow. All hairs and bristles black.

Head as in *microcera*. Anterior of the two pairs of dorsocentral bristles of moderate length.

Length, 1.75 mm.

Type, Sydney, N.S.W., 30.11.24.

FERGUSONINA SCUTELLATA, n. sp.

♂.—A much darker species and more strongly bristled than the preceding one. Arista black, sides of occiput as well as ocellar spot black. Only the lateral margins of mesonotum, sutures of pleura, and apical margins of scutellum yellow. Dorsum of abdomen except narrow margins of tergites 1 to 4 and apical half of 5 black. Legs yellow, a fuscous streak on anterior side of hind femur. Wings greyish hyaline, veins conspicuous. All bristles black.

Orbital bristles quite distinct. Similar to other species in chaetotaxy, etc.

Length, 2 mm.

Type, Sydney, N.S.W., 1.1.25.

Subfamily OCHTHIPHILINAE.

This subfamily lacks the bristles on vibrissal angles of cheeks, has the auxiliary vein of wing complete and separate from first on its entire length, and the postvertical bristles parallel or convergent.

Genus PSEUDOLEUCOPIS novum.

Generic characters.—Wing as in Figure 10, the auxiliary vein quite distinct and more widely separated from first than usual in this subfamily. Frons with two pairs of orbital bristles; ocellars distinct; postverticals rather small, convergent; antennae large; arista subnude; vibrissae lacking. Thorax with two pairs of dorsocentrals, the prescutellar acrostichals distinct; scutellum with four bristles; mesopleura bare; sternopleura with one long and one short bristle. Legs normal.

Genotype, the first described species herein.

PSEUDOLEUCOPIS MAGNICORNIS, n. sp.

♀.—Head black, frons opaque, orbits, lunule and cheeks whitish pruinose; face glossy in centre. Thorax slightly shining, black, with dense lead-grey pruinoscence. Abdomen glossy black, with faint brownish dusting. Femora fuscous, fore coxae, tibiae, and tarsi brownish-yellow. Wings clear. Halteres white.

Frons fully one-third of head width, a little longer than wide; orbits distinct to below upper bristle, the anterior bristle on an isolated differentiated spot; third antennal segment about three times as long as height of cheek and about one-fourth longer than high; face glossy, with a sharp vertical keel or carina in centre which slopes off to sides. Thorax with more than eight series of intradorsocentral setulae. Legs rather stout. Wing as in Figure 10.

Length, 2.25 mm.

Type, North Harbour, Sydney, N.S.W., 30.3.23.

PSEUDOLEUCOPIS FLAVITARSIS, n. sp.

♀.—Differs from the preceding species in having the orbits grey and differentiated on their entire length, the face does not have a sharp central keel or carina, but is slightly convex in centre and entirely grey pruinose, third antennal segment smaller, and the legs black, with only the tarsi yellow. Otherwise as *magnicornis*.

Length, 2.5 mm.

Type, Sydney, N.S.W., 12.10.24.

Family Geomyzidae.

This so-called family is difficult to define and may yet have to be linked with Agromyzidae, but tentatively I allow it to stand, in the hope that when I get round to placing before students of the order my key to the families of acalyprates, I may be able definitely to assign to the different groups the status which they appear to be entitled to. Later I will revert to this subject; meanwhile, I merely describe a new species of one genus which has been located in the family by authors.

Genus APHANTIOSOMA Becker.

This genus was erected for the reception of an Egyptian species described by Becker. Later I described a North American species which I placed in the genus. I have not seen the genotype but, except for the narrower cheeks of the present species and the presence of a mesopleural bristle, which is not mentioned by Becker, the species appears to belong here. I figure the head of the new species (Fig. 11).

APHANIOSOMA NIGRIDORSUM, n. sp.

♂.—Frons yellow, face and cheeks yellowish-white, occiput black, its lower margin yellowish, ocellar triangle black, antennae reddish-yellow, darkened at the insertion of arista, palpi yellow, arista fuscous. Thorax stramineous, disc broadly black, shining, with slight grey pruinescence, the hind margin of the black mark with an angulate notch in centre leaving a yellow triangle in front of scutellum, sternopleura black, except above, mesopleura black on lower margin; postnotum black; scutellum yellow, black on sides at base. Abdomen shining black, yellow at extreme base. Legs yellow. Wings hyaline. Halteres yellow.

Head as in Figure 11. Thorax with two pairs of dorsocentral bristles, the anterior pair short; prescutellar acrostichals distinct; scutellum slightly flattened; basal pair of bristles much shorter than apical pair, which are convergent. Veins 3 and 4 slightly and gradually convergent apically; inner cross-vein at two-fifths from apex of discal cell; last section of fifth vein distinctly longer than penultimate section of fourth, the latter not more than one-fourth as long as ultimate section of fourth.

Length, 1.5 mm.

Type, Sydney, N.S.W., 16.12.23. Paratypes, same locality, October and November, 1923-24, 12 specimens.

This species is much darker in colour than either of the already described forms and the thoracic markings are distinctive.

Family Chloropidae.

Subfamily CHLOROPINAE.

Genus CHLOROPELLA NOVUM.

Generic characters.—Ocellar bristles distinct, divergent and directed forward and upward; orbits each with three or four short but distinct bristles; vertex with two bristles on each side, the inner one situated in front of the outer, incurved, the outer outcurved, both rather distant from eye; triangle present; interfrontalia haired; arista normal, dorsal on the rounded third antennal segment; eyes very short haired; face subvertical, not carinate; cheek normal; proboscis stout. Thorax with a short humeral, one short anterior and a long posterior notopleural, one pair of long prescutellar dorsocentral bristles and a pair of long presuturals; scutellum with the basal pair of bristles much shorter than apical pair. Legs long and rather slender, hind tibia without a sensory area. Costa to a little beyond apex of third vein, the latter ending in front of, the fourth behind, apex of wing, the veins divergent.

Genotype, the following species.

CHLOROPELLA BIPARTITA, n. sp.

♀.—Shining pale yellow. A black spot over ocelli and another on middle of occiput. Thoracic dorsum with three rufous vittae, the median one extending from anterior margin to beyond suture and black on both extremities, the lateral pair not extending so far forward but carried farther backward, and only their posterior extremities black; pleura without black marks, sternopleura orange coloured below; scutellum with a fuscous mark on each side at base; postnotum black. Abdomen with a small round fuscous spot on each side of first tergite. Legs yellow. Wings clear.

Frontal triangle extending to anterior margin of frons; arista pubescent; cheek about one-sixth of the eye height. Dorsum of thorax with numerous pale

decumbent hairs; disc of scutellum slightly flattened, with a few short dark hairs. Abdomen tapered apically. First costal division a little shorter than third, the latter fully two-thirds as long as second; penultimate section of fourth vein fully twice as long as outer cross-vein, about half as long as last section of fifth, one-fifth as long as last section of fourth, and about 1.5 times as long as penultimate section of third vein.

Length, 1.5 mm.

Type, Sydney, N.S.W., October 29, 1924.

This is the only genus of the subfamily known to me which has distinct presutural bristles on thorax.

Genus PACHYLOPHUS Loew.

An Old World genus, most abundantly represented in Africa, and absent in the New World, so far as our records go. Distinguished from *Chloromerus*, which it resembles in having the hind femora much swollen and armed with spines below, by the much thickened subapical antennal arista which is densely black haired and appears about half as thick as the third antennal segment. The fourth wing-vein is very faint beyond the outer cross-vein, though traceable to margin behind wing tip.

This is the first record of the genus from Australia.

PACHYLOPHUS LUTEA, n. sp.

♀.—Testaceous yellow, shining. Ocellar spot, a portion of each antennal fovea, and a small spot on upper inner mouth-margin blackish. Thoracic vittae rufous, not very conspicuous; a spot on each humerus, a streak on lower margin of mesopleura, a spot on hypopleura, and the postnotum blackish; sternopleura red below. Abdominal tergites darkened basally. Wings clear. Halteres yellow.

Frons projecting as far as one-third of eye length; third antennal segment about 1.5 times as long as high; cheek fully one-fourth as high as eye. Thorax as in normal species of the genus *Chlorops*. Penultimate section of veins 3 and 4 equal, either about .75 times as long as last section of fifth vein.

Length, 3 mm.

Type, Eidsvold, Queensland (Bancroft).

The yellow colour preponderates more than in any other species of the genus.

Subfamily BOTANOBIINAE.

Genus THYRIDULA Becker.

I described *Thyridula atropicata* in a previous paper on Australian Diptera and now add another species. These two species are very similar in structure and colour so that I consider it is unnecessary to describe fully the new one and merely present a synopsis of the distinguishing characters as follows:

- A. Face entirely yellow; scutellum black at apex only; hind legs yellow, the tibia slightly darker in middle; pleural spots not very large, deep black and contrasting sharply with the yellow ground colour of pleura *atropicata* Malloch.
- AA. Face glossy brownish-black except on parafacials; scutellum with a broad black central stripe; hind legs yellow, femur and tibia broadly black, pleural spots very large, not very sharply contrasting with the rufous ground colour of pleura *centralis*, n. sp.

THYRIDULA CENTRALIS, n. sp.

♀.—The tarsal claws of the hind legs are, as in the male of *atroapicata*, much larger than those of the other legs and very much curved, sickle-shaped. Length, 4 mm.

Type, Sydney, N.S.W., 9.11.24.

It is possible, but hardly probable, that this is the female of *atroapicata*.

PARAHIPPELATES ANOMALA, n. sp.

♀.—Head including antennae rufous yellow, upper half of frons and the occiput fuscous, shining, but with greyish pruinescence, cheeks and face whitish pruinulent; arista fuscous. Mesonotum and scutellum glossy olivaceous black, with a quite noticeable purplish tinge, two very faint submedian lines and lateral margins broadly grey pruinulent; pleura grey pruinulent. Abdomen varying from brown to fuscous, with grey pruinescence, apices of tergites yellowish. Legs tawny yellow, mid and hind coxae, at least mid and hind femora, and sometimes fore pair also, largely blackish; same tibiae blackish except basally, apical two segments of all tarsi fuscous. Wings greyish, veins yellowish basally. Calyptera white. Halteres pale.

Ocellar bristles of moderate length; arista entirely nude; vibrissal setulae pale and weak; eye distinctly higher than long, more than twice as high as cheek. Dorsocentral thoracic bristles except the hind pair short but distinct; scutellum with basal marginal bristles shorter than apical pair, the discal hairs short. Spur of hind tibia almost indistinguishable from the surrounding hairs. The three principal costal divisions subequal; outer cross-vein about its own length from apex of fifth vein.

Length, 3-4 mm.

Type, Blue Mts., N.S.W., 15 Jan., 1922. Paratypes, Mt. Eba, S.A., north of east and west line (Campbell).

This species differs from all the others already described in having the hind tibial spur very minute, in fact in some specimens practically absent. However, it is unmistakably a *Parahippelates*. The glossy dorsum of thorax with its purplish tinge is quite distinct from the thoracic colour of any other Australian species.

It appears probable to me that *pruinosa* Thomson and possibly also *ornatifrons* de Meijere belong here. Both have four pairs of dorsocentral bristles, but neither the original describers nor Becker give sufficient details to permit of a definite opinion.

Genus EUHIPPELATES NOVUM.

Generic characters.—Similar to *Hippelates* Loew, differing essentially in the form of the scutellum which is nearly as long as the mesonotum, about twice as long as its basal width, gradually tapered to tip, where it is about one-fourth as wide as at base, centre with a broad shallow sulcus narrower posteriorly, the sides with rather dense microscopic spinules, the sulcate portion with sparser spinules, apex with a pair of pale divergent bristles, lateral margins with much shorter pale bristles. Mesonotum with three linear sulci.

Genotype, the following species.

EUHIPPELATES PALLIDISETA, n. sp.

♀.—Head yellow, ocellar region broadly blackened and grey pruinulent, occiput similarly coloured except lower margin; antennae and palpi yellow.

Thorax black, dorsum and upper part of pleura densely grey pruinose, lower half of pleura mostly glossy black; scutellum black, paler in centre, yellow at apex. Abdomen shining fuscous, basal and apical segments yellow. Legs yellow, all femora broadly infuscated in middle. Wings hyaline, veins yellow, the following portions blackish: costa just in front of apex of first vein, first vein on apical fourth, second vein at base below dark part of first vein, third vein from fork to just beyond inner cross-vein, fourth vein from before inner to beyond outer cross-vein, fifth vein on either side of outer cross-vein, and both cross-veins. Halteres yellow. All hairs and bristles yellow.

Frons with regularly arranged sparse short hairs, the triangle not defined; eyes almost bare; face sunken, with a sharp median carina, the antennae half hidden when face is viewed from side; arista slender, almost bare; cheek narrow. Mesonotum with four or five series of short decumbent hairs between the sulci, and three long bristles on each side on posterior margin, the inner one just laterad of the outer sulci; humeri quite prominent, well distinguished from mesonotum, each with two short bristles, both backwardly directed. Hind tibial spur fully as long as greatest diameter of tibia, situated well in front of apex. A peculiarity of the wing is that the fifth vein has no noticeable flexure near middle of discal cell (Figure 12, p. 91).

Length, 2 mm.

Type, Sydney, N.S.W., 24 June, 1924. Allotype, male, same locality, 15.10.24.

EUHIPPELATES PALLIDISETA var. *PALLIPES* nov.

Similar to the typical form, but the legs are entirely yellow.

Length, 1.5-1.75 mm.

Type, female, Sydney, N.S.W., 30.11.24. Allotype and one male paratype, same locality, 30.11.24 and 29.11.24.

HIPPELATES BANCROFTI, n. sp.

♀.—Head yellow; frontal triangle shining black except on its anterior and lateral posterior angles; antennae darkened only at insertion of arista, the latter and its hairs black; cheeks silvery white; palpi yellow; occiput black on upper half. Thorax shining yellow, with a black spot on middle of anterior margin well concealed by head, a rather large black spot on dorsum behind each humerus, a fuscous mark above each wing base, a black line along notopleural suture, a large subquadrate black mark in middle of hind margin which is indented on anterior side and extends narrowly over base of scutellum; pleura black along lower margin of mesopleura and on lower half of pteropleura; postnotum black. Abdomen black, basal segment yellow. Legs yellow. Wings hyaline. Halteres yellow.

Ocellar bristles cruciate; orbital setulae quite distinct; arista distinctly pubescent; cheek as high as width of palpi. Scutellum convex, almost rounded in outline, with four marginal bristles and some very fine black discal hairs; sternopleura with some fine pale hairs and a black setula above. Hind legs rather stout, spur of tibia much curved, situated before apex, about three-fourths as long as basal segment of tarsus. Veins 3 and 4 divergent at apices.

Length, 2 mm.

Type, Eidsvold, Queensland, 26 April, 1924 (Bancroft).

Distinguished by its thoracic markings from any species of the genus.

The specimen was reared from cotton bolls.